MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2021/2022

DBM5624 – PRINCIPLES OF FINANCE

(All Sections/Groups)

8 AUGUST 2022
2.30 p.m – 4.30 p.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **4** pages excluding the front cover and appendices.
2. Please write your answers in the answer booklet provided.
3. Answer ALL questions.
4. The formulae are given in the appendix.

Structured Questions (100 Marks)

QUESTION 1

Wonderfull Sdn. Bhd. has stated a face value of RM1,000. The current market value of their bond is RM10,000. Their bond pays interest annually and will mature in 8 years. It also has a yield to maturity of 15.5%. (12.5 marks)

a. Calculate the current yield. (6 marks)

b. Is the bond selling at par, premium or discount? Why? (2 marks)

c. In the next few years, Wonderfull Sdn. Bhd. has planned that they will issue 12 years zero-coupon bond with a yield to maturity of 16 percent. How much should the company charge for this bond? (2.5 marks)

d. Based on your answer in **(c)**, how many bonds should the company sell in order to raise a capital of RM5 million? (2 marks)

(Total: 12.5 marks)

QUESTION 2

a. Jolin Chew Sdn. Bhd. has stated a positive financial value despite the business is affected by Covid-19. The company is expected to pay the following dividends over the next 3 years:RM1.80, RM3.50 and RM6.00 to all of their shareholders. After the third year, the company will maintain a constant dividend at 6.5 percent growth rate forever. If the required return for this stock is 15%, what is the value of the stock today? (8.5 marks)

Continued...

b. Ali is interested to invest in a stock of Abu Sdn. Bhd. that has a stock price of RM15.00. Ali is expected to gain a dividend growth rate of 19% and the most recent dividend payout is RM0.50. Find out what will be the required return of this stock? (3 marks)

c. Ming Bing's company is paying a dividend of RM5.00 per share only in year 6. It will increase the dividend by 12 percent per year thereafter. If the required return for the stock is 18 percent, calculate the value of the stock today. (5.5 marks)

d. Pink Pink Sdn Bhd has announced that their company's dividend will increase by 6 percent in year 1, 12 percent in year 2 and 8 percent in year 3. Then the dividend will increase constantly 5 percent after the 3rd year. The company just has paid a dividend of RM3.80 per share. The required rate of return for this stock is 25 percent. Calculate the current value of the stock. (13 marks)

(Total: 30 marks)

QUESTION 3

Ah John is planning to invest in a multi-billion project after he finishes his studies. The initial cost of the project will be RM10,000. The project will be producing the below cash inflows for 4 years: (16 marks)

Year	0	1	2	3	4
Cash inflow	-RM10,000	RM3,500	RM3,800	RM2,000	RM5,000

Calculate:

i. Payback period. (5 marks)

ii. If the estimated payback period is 2 years, should Ah John accept the project? (1 mark)

iii. If the project gives a discount rate of 35 percent, what will be the project's profitability index? (7.5 marks)

(Total: 16 Marks)

Continued ...

QUESTION 4

a. Bie Ann has to decide to choose a project between Project Raichu and Project Bulbasaur. Project Raichu has an initial cost of RM5,000 and generates a cash flow of RM3,000 each year for 4 years. Project Bulbasaur also has the same initial cost and generates a cash flow of RM2,800 in year 1, RM1,500 in year 2, RM3,500 in year 3 and RM1,800 in year 4. Calculate the net present value for both projects and decide which project should Bie Ann choose if the cost of capital is 15 percent?
(12 marks)

b. Suka Hati Bhd is considering to purchase a new production machine which will cost them RM150,000. It is forecasted to generate the following net income. The company will depreciate the machine to a zero-accounting value. Calculate what is the average accounting rate of return?
(7 marks)

Year	1	2	3	4
Net Income (RM)	5,000	12,000	4,800	9,500

c. Define the below terms: -
i. Net present value (2 marks)
ii. Profitability index (1 mark)
(1 mark)

(Total: 21 marks)

QUESTION 5

a. Speedy Amigo Enterprise has 15,000 shares of common stock outstanding at a price of RM5 a share. It also has 5,000 shares of preferred stock outstanding at a price of RM10 a share. There are 20 bonds outstanding that have an 8% coupon. The bonds mature in 5 years, have a face value of RM1,000, and sell at 85 % of par. Calculate the capital structure for the below: -
(11.5 marks)

i. What is the capital structure weight of the debt?
ii. What is the capital structure weight of the common stock?
iii. What is the capital structure weight of the preferred stock?

Continued...

b. Abraham has 20,000 shares of stock outstanding at a price of RM50 per share.

i. How many shares will be outstanding if the company does a 3-for-2 stock split? (2.5 marks)

ii. How much is the price per share after the company does a 3-for-2 stock split? (2.5 marks)

c. List down **TWO (2)** advantages and **TWO (2)** disadvantages of using Security Market Line (SML) method in calculating cost of equity. (4 marks)

(Total: 20.5 marks)

End of Paper.

Appendix Formulae:

I. **Symbols**
PV = Present value, what future cash flows are worth today
FV_t = Future value, what cash flows are worth in the future
r = Interest rate, rate of return, or discount rate per period typically , but not always, one year
t = Number of periods typically , but not always, the number of years
C = Cash amount

II. **Future value of C invested at r percent per period for t periods**
$FV_t = C \times (1 + r)^t$
The term $(1 + r)^t$ is called the *future value factor.*

III. **Present value of C to be received in t periods at r percent per period**
$PV = C/(1 + r)^t$
The term $1/(1 + r)^t$ is called the *present value factor.*

IV. **The basic present value equation giving the relationship between present and future value is**
$PV = FV_t/(1 + r)^t$

I. **Symbols**
PV = Present value, what future cash flows are worth today
FV_t = Future value, what cash flows are worth in the future at time t
r = Interest rate, rate of return, or discount rate per period—typically, but not always, one year
t = Number of periods—typically, but not always, the number of years
C = Cash amount

II. **Future value of C invested per period for t periods at r percent per period**
$FV_t = C \times [(1 + r)^t - 1]/r$
A series of identical cash flows paid for a set number of periods is called an annuity, and the term $[(1 + r)^t - 1]/r$ is called the *annuity future value factor.*

III. **Present value of C per period for t periods at r percent per period**
$PV = C \times (1 - [1/(1 + r)^t])/r$
The term $(1 - [1/(1 + r)^t])/r$ is called the *annuity present value factor.*

IV. **Present value of a perpetuity of C per period**
$PV = C/r$
A perpetuity has the same cash flow every period forever.

I. **Finding the value of a bond**
Bond value $= C \times [1 - 1/(1 + r)^t]/r + F/(1 + r)^t$
where
C = Coupon paid each period
r = Rate per period
t = Number of periods
F = Bond's face value

II. **Finding the yield on a bond**
Given a bond value, coupon, time to maturity, and face value, it is possible to find the implicit discount rate, or yield to maturity, by trial and error only. To do this, try different discount rates in the formula above until the calculated bond value equals the given bond value. Remember that increasing the rate *decreases* the bond value.

I. **The general case**
In general, the price today of a share of stock, P_0, is the present value of all of its future dividends, $D_1, D_2, D_3, \ldots$:

$$P_0 = \frac{D_1}{(1+R)^1} + \frac{D_2}{(1+R)^2} + \frac{D_3}{(1+R)^3} + \cdots$$

where R is the required return.

II. **Constant growth case**
If the dividend is constant and equal to D, then the price can be written as:

$$P_0 = \frac{D}{R}$$

If the dividend grows at a steady rate, g, then the price can be written as:

$$P_0 = \frac{D_1}{R - g}$$

This result is called the *dividend growth model.*

III. **Nonconstant Growth**
If the dividend grows steadily after t periods, then the price can be written as:

$$P_0 = \frac{D_1}{(1+R)^1} + \frac{D_2}{(1+R)^2} + \cdots + \frac{D_t}{(1+R)^t} + \frac{P_t}{(1+R)^t}$$

where

$$P_t = \frac{D_t \times (1+g)}{(R-g)}$$

IV. **Valuation Using Multiples**
For stocks that don't pay dividends (or have erratic dividend growth rates), we can value them using the PE ratio and/or the price-sales ratio:

P_t = Benchmark PE ratio × EPS_t
P_t = Benchmark price-sales ratio × Sales per $share_t$

V. **The required return, R, can be written as the sum of two things:**

$$R = D_1/P_0 + g$$

where D_1/P_0 is the *dividend yield* and g is the *capital gains yield* (which is the same thing as the growth rate in dividends for the steady growth case).

I. The cost of equity, R_E

A. Dividend growth model approach (from Chapter 7):

$$R_E = D_1/P_0 + g$$

where D_1 is the expected dividend in one period, g is the dividend growth rate, and P_0 is the current stock price.

B. SML approach (from Chapter 11):

$$R_E = R_f + \beta_E \times (R_M - R_f)$$

where R_f is the risk-free rate, R_M is the expected return on the overall market, and β_E is the systematic risk of the equity.

II. The cost of debt, R_D

A. For a firm with publicly held debt, the cost of debt can be measured as the yield to maturity on the outstanding debt. The coupon rate is irrelevant. Yield to maturity is covered in Chapter 6.

B. If the firm has no publicly traded debt, then the cost of debt can be measured as the yield to maturity on similarly rated bonds (bond ratings are discussed in Chapter 6).

III. The weighted average cost of capital, WACC

A. The firm's WACC is the overall required return on the firm as a whole. It is the appropriate discount rate to use for cash flows similar in risk to the overall firm.

B. The WACC is calculated as:

$$\text{WACC} = (E/V) \times R_E + (D/V) \times R_D \times (1 - T_C)$$

where T_C is the corporate tax rate, E is the *market* value of the firm's equity, D is the *market* value of the firm's debt, and $V = E + D$. Note that E/V is the percentage of the firm's financing (in market value terms) that is equity, and D/V is the percentage that is debt.